

AFRRI Board of Governors

Minutes of the 30th Meeting - 16 December 1981

1. LTG Harry A. Griffith, Director, Defense Nuclear Agency and Chairman of this Board, opened the meeting at approximately 0915 hours, 16 December 1981, with a welcome to the members of the Board and observers. Attendees and their respective organizations are listed at Enclosure 1. LTG Griffith's introductory and background remarks included the following topics:

a. At the Board's meeting last year there was agreement for the establishment of a Requirements and Program Review Group, to be composed of operational and medical representatives of the services, which would serve in an institutionalized management oversight capacity to AFRRI and would provide assistance in the development of an AFRRI research program. The concept was that each of the services would provide one representative with a medical orientation and one with an operational background to serve on that Group, which was to function under the overall chairmanship of LTG Griffith and the specific direction of CAPT Tyler. That Group has subsequently met several times and its accomplishments have been encouraging. The results achieved thus far are indicative of the fine effort devoted by the individual representatives in working on the assigned tasking of the Group.

b. While this meeting today pertains specifically to AFRRI, the philosophy and approach used by DNA to examine the relationships between AFRRI and the military services have been extended to other aspects of the total DNA organization. Meetings have been held with the service operations deputies in the past several months to discuss the relationships and tighten the respective interface communication links pertaining to the broad functional areas of strategic and theater arenas, C³I, integrated warfare, etc. By determining the common threads that run through the services in these key issue areas, as they pertain to the total DNA mission responsibilities, we anticipate an improvement in the overall manner that we do business as it relates to the services. Early dialogue with the services to ascertain those things they need that DNA should provide, and the effective discovery of common requirements existing at more than one service (so that we can have one contractor work that problem one time for the entire Defense Department), will do a great deal to accomplish our immediate goal.

c. A key aspect to the philosophy used in looking at the manner by which both AFRRI and DNA should approach that portion of their mission statement pertaining to supporting the services can be summarized as follows: we must insure that the service(s) requirements are first known, understood, and prioritized. Those requirements must then be considered in relationship to the mission specific research program so that the end result is a program that is both responsive to specific needs of the services and the needs of the research investigator to be creative in his broad area of science. The first is important since it represents the research mission. The latter is important because it provides the scientist flexibility to grow and develop within his field of expertise.

2. CAPT Paul E. Tyler, Director, AFRRI, led the next period of discussion.

a. CAPT Tyler first introduced the new AFRRI Scientific Director, Dr. Lawrence S. Myers (who will officially report for duty approximately 8 February 1982), and asked him to make a few comments. Dr. Myers expressed his pleasure at being with AFRRI, which

four alphabetic letters indicate a general priority for a group of individual research projects without imposing the mind-set that would occur if the absolute, one-up number priority system for those separate projects had been used.

(b) With regard to the subject of relative biological effectiveness (RBE), this term is used to compare the dosage of gamma radiation exposure and that of neutron radiation exposure required to achieve a pre-determined biologic condition or end point. For example, if a 50% mortality rate were the biologic end point under consideration, and we determined that a gamma dosage of 1,000 rads caused that effect while 200 rads of neutron irradiation caused that same mortality rate, then the RBE would be 5 (i.e., gamma dosage divided by neutron dosage). Stated in another way, the same damage would occur from 200 rads of neutrons as from 1,000 rads of gamma photons. A key element to remember when discussing RBE is that it varies with different types of energy as well as with the biologic end point being considered (e.g., tumor production, lethality, performance decrement, incapacitation). Another consideration is that there are differences in the end points depending upon whom (i.e., operational forces or medical community) is interested in the results from a particular research study. In AFRRRI research, other than for those studies pertaining to emesis and incapacitation, the RBE obtained from our sources range between 4 and 6 for most end points and much higher for tumor production. AFRRRI uses computer models to obtain answers to specific questions asked by supported organizations such as USANCA. A collorary situation pertaining to RBE which could present an operational problem concerns the currently allowable standards for exposure of U.S. personnel to radiation and the impact that could occur if/when the higher exposure values of neutron radiation are taken into account when the cumulative exposure for the individual or unit is computed. This could present a problem for those forces currently involved in the handling of nuclear weapons and on board ships where crewmen sleep in close proximity to stored weapons.

(c) The term incapacitation was defined in the experimental usage as being the inability of a research animal to perform within one minute a task for which it had been trained. The primary basis upon which AFRRRI determines incapacitation is research involving nearly 700 monkeys; that primate data base is used to extrapolate information pertaining to similar effects upon humans. A typical computer generated monogram was shown based on 188 primates.

4. LTG Griffith opened the meeting to the Board members for general comments or to address any pertinent topics not previously considered. Points raised or comments made during this portion of the session follow:

a. VADM Cox stated his pleasure at what was presented at this meeting and at the progress made on those initiatives discussed at the last Board meeting. He added that he no longer considers AFRRRI to be an institute in search of a mission; it has recognized and addressed its mission.

b. In this regard, LTG Griffith expressed his appreciation to the Board for the support given AFRRRI/DNA toward this endeavor since the last meeting. The accomplishments came about from an excellent team effort by all members of the Requirements and Program Review Group in articulating the service requirements and in setting priorities to address those varied requirements. It was a difficult task made easier

Attendees - 30th Meeting of the AFRRI Board of Governors

Members of the Board

LTG Harry A. Griffith, USA	Director, Defense Nuclear Agency
VADM J. William Cox, USN	Surgeon General, U.S. Navy
Lt Gen Paul W. Myers, USAF	Surgeon General, U.S. Air Force
*MG Quinn Becker, USA	Deputy Surgeon General, U.S. Army

Observers

Dr. Edward E. Conrad, Defense Nuclear Agency
Dr. Edwin T. Still, Defense Nuclear Agency
COL Frank E. McDermott, USA, Office of the Surgeon General, U.S. Army
CAPT Paul E. Tyler, USN, Armed Forces Radiobiology Research Institute
COL Bobby R. Adcock, USA, Armed Forces Radiobiology Research Institute
Dr. Lawrence S. Myers, Jr., Armed Forces Radiobiology Research Institute
Lt Col James J. Conklin, Armed Forces Radiobiology Research Institute

(* MG Quinn Becker representing Surgeon General, U.S. Army)

Enclosure 3

Briefing Slides used in Lt Col Conklin's Presentation

BIOMEDICAL EFFECTS RESEARCH PROGRAM

CATEGORY

PRIORITY

NUCLEAR WEAPONS EFFECTS EDUCATION A

DEGRADATION OF COMBAT PERFORMANCE A
EFFECT OF IONIZING RADIATION ON COMBAT EFFECTIVENESS A
MECHANISMS OF PERFORMANCE DECREMENT AND INCAPACITATION A
EFFECT OF DRUGS ON COMBAT PERFORMANCE A
COMBINED EFFECTS ON COMBAT PERFORMANCE A

PREVENTION AND TREATMENT OF RADIATION EFFECTS A
RADIOPROTECTANTS: CHEMICAL AND PHYSICAL B
RADIATION-INDUCED CARDIOVASCULAR DYSFUNCTION B
RADIATION-INDUCED GASTROINTESTINAL DYSFUNCTION B
RADIATION-INDUCED HEMATOPOIETIC DYSFUNCTION B
MEDICAL AND SURGICAL THERAPY OF COMBINED EFFECTS A

INCAPACITATION ($m/\tau = 0.4$)

PERCENT
INCAPACITATION

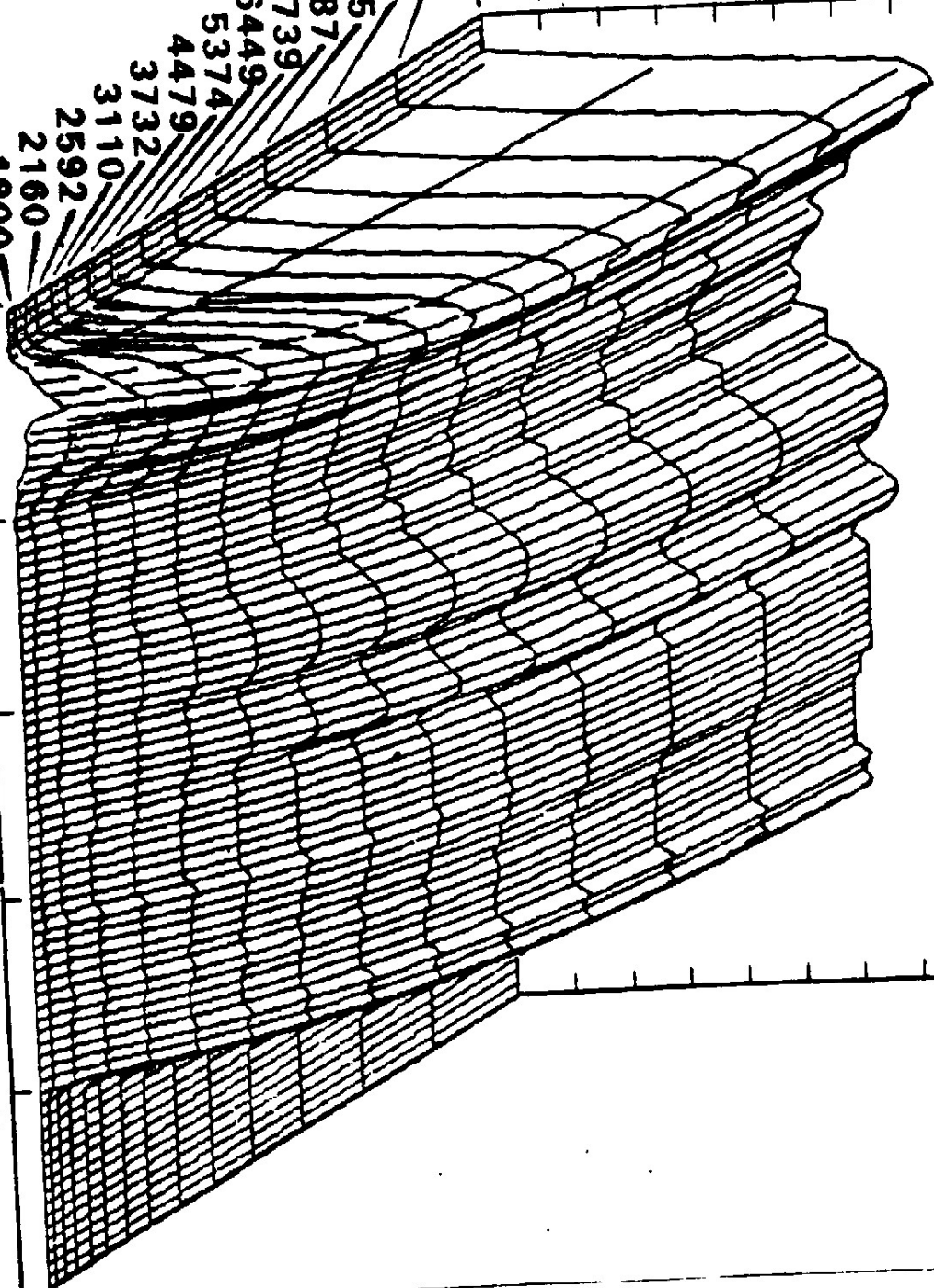
100
90
80
70
60
50
40
30
20
10

DOSE
(free-in-air rads)

19258
16049
13374
11145
9287
7739
6449
5374
4479
3732
3110
2592
2160
1800
1500

TIME (minutes)

0 30 60 90 120



26 JAN 1972

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SUBJECT: Minutes of the AFRR 30th Board of Governors' Meeting

LTG Bernhard T. Mitemeyer, MC, USA
The Surgeon General
Department of the Army
The Pentagon, Room 3E468
Washington, D.C. 20310

Bernie

Enclosed are the minutes from the subject meeting.

Enclosure
as stated

Harry

HARRY A. GRIFFITH
Lieutenant General, USA
Director

*Sorry you weren't able to
be there personally but Quinn
covered for you very well. I
appreciate your support.
All the best -*

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30th Meeting of the AFRRI Board of Governors (BOG)

16 December 1981

AGENDA

- 0900 Opening Remarks - LTG H.A. Griffith, USA
- 0915 Review of past year and future plans - CAPT P.E. Tyler, USN
- 0945 Comments and Discussion - BOG
- 1000 Coffee Break
- 1015 Five-Year Plan - CAPT P.E. Tyler and Staff
 - Development/Methodology
 - Overview of Plan
- 1045 Discussion by BOG
- 1145 Comments and Summary by Chairman
- 1200 Adjourn